



SEQUENCE LISTING

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Datta, Abhijit
Wang, Yuping

<120> METHODS AND COMPOSITIONS FOR
DETERMINATION OF GLYCATED PROTEINS

<130> 466992001300

<140> 10/622,893

<141> 2003-07-17

<160> 23

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> 40%-100% identity to leader sequence

<400> 1

Met Gly Gly Ser Gly Asp Asp Asp Asp Leu Ala Leu
1 5 10

<210> 2

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> FAD cofactor-binding consensus sequence

<221> VARIANT

<222> 2, 4, 5

<223> Xaa = Any Amino Acid

<400> 2

Gly Xaa Gly Xaa Xaa Gly
1 5

<210> 3

<211> 437

<212> PRT

<213> Artificial Sequence

<220>

<223> 40%-100% identity to the amadoriase

<400> 3

Ala Val Thr Lys Ser Ser Ser Leu Leu Ile Val Gly Ala Gly Thr Trp
1 5 10 15

Gly	Thr	Ser	Thr	Ala	Leu	His	Leu	Ala	Arg	Arg	Gly	Tyr	Thr	Asn	Val		
			20					25					30				
Thr	Val	Leu	Asp	Pro	Tyr	Pro	Val	Pro	Ser	Ala	Ile	Ser	Ala	Gly	Asn		
		35					40					45					
Asp	Val	Asn	Lys	Val	Ile	Ser	Ser	Gly	Gln	Tyr	Ser	Asn	Asn	Lys	Asp		
		50				55					60						
Glu	Ile	Glu	Val	Asn	Glu	Ile	Leu	Ala	Glu	Glu	Ala	Phe	Asn	Gly	Trp		
65					70					75				80			
Lys	Asn	Asp	Pro	Leu	Phe	Lys	Pro	Tyr	Tyr	His	Asp	Thr	Gly	Leu	Leu		
				85					90					95			
Met	Ser	Ala	Cys	Ser	Gln	Glu	Gly	Leu	Asp	Arg	Leu	Gly	Val	Arg	Val		
			100					105					110				
Arg	Pro	Gly	Glu	Asp	Pro	Asn	Leu	Val	Glu	Leu	Thr	Arg	Pro	Glu	Gln		
		115					120					125					
Phe	Arg	Lys	Leu	Ala	Pro	Glu	Gly	Val	Leu	Gln	Gly	Asp	Phe	Pro	Gly		
		130				135					140						
Trp	Lys	Gly	Tyr	Phe	Ala	Arg	Ser	Gly	Ala	Gly	Trp	Ala	His	Ala	Arg		
145					150					155				160			
Asn	Ala	Leu	Val	Ala	Ala	Ala	Arg	Glu	Ala	Gln	Arg	Met	Gly	Val	Lys		
				165				170					175				
Phe	Val	Thr	Gly	Thr	Pro	Gln	Gly	Arg	Val	Val	Thr	Leu	Ile	Phe	Glu		
		180						185					190				
Asn	Asn	Asp	Val	Lys	Gly	Ala	Val	Thr	Gly	Asp	Gly	Lys	Ile	Trp	Arg		
		195					200					205					
Ala	Glu	Arg	Thr	Phe	Leu	Cys	Ala	Gly	Ala	Ser	Ala	Gly	Gln	Phe	Leu		
		210				215					220						
Asp	Phe	Lys	Asn	Gln	Leu	Arg	Pro	Thr	Ala	Trp	Thr	Leu	Val	His	Ile		
225					230					235					240		
Ala	Leu	Lys	Pro	Glu	Glu	Arg	Ala	Leu	Tyr	Lys	Asn	Ile	Pro	Val	Ile		
				245					250					255			
Phe	Asn	Ile	Glu	Arg	Gly	Phe	Phe	Phe	Glu	Pro	Asp	Glu	Glu	Arg	Gly		
		260						265					270				
Glu	Ile	Lys	Ile	Cys	Asp	Glu	His	Pro	Gly	Tyr	Thr	Asn	Met	Val	Gln		
		275					280					285					
Ser	Ala	Asp	Gly	Thr	Met	Met	Ser	Ile	Pro	Phe	Glu	Lys	Thr	Gln	Ile		
		290				295					300						
Pro	Lys	Glu	Ala	Glu	Thr	Arg	Val	Arg	Ala	Leu	Leu	Lys	Glu	Thr	Met		
305					310					315					320		
Pro	Gln	Leu	Ala	Asp	Arg	Pro	Phe	Ser	Phe	Ala	Arg	Ile	Cys	Trp	Cys		
				325					330					335			
Ala	Asp	Thr	Ala	Asn	Arg	Glu	Phe	Leu	Ile	Asp	Arg	His	Pro	Gln	Tyr		
				340				345					350				
His	Ser	Leu	Val	Leu	Gly	Cys	Gly	Ala	Ser	Gly	Arg	Gly	Phe	Lys	Tyr		
		355					360					365					
Leu	Pro	Ser	Ile	Gly	Asn	Leu	Ile	Val	Asp	Ala	Met	Glu	Gly	Lys	Val		
		370				375					380						
Pro	Gln	Lys	Ile	His	Glu	Leu	Ile	Lys	Trp	Asn	Pro	Asp	Ile	Ala	Ala		
385					390					395					400		
Asn	Arg	Asn	Trp	Arg	Asp	Thr	Leu	Gly	Arg	Phe	Gly	Gly	Pro	Asn	Arg		
				405					410					415			
Val	Met	Asp	Phe	His	Asp	Val	Lys	Glu	Trp	Thr	Asn	Val	Gln	Tyr	Arg		
			420					425					430				
Asp	Ile	Ser	Lys	Leu													
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<210> 4

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> 40%-100% identity of the second bacterial leader sequence

<400> 4
 Lys Gly Glu Leu Glu Gly Leu Pro Ile Pro Asn Pro Leu Leu Arg Thr
 1 5 10 15
 Gly

<210> 5
 <211> 472
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> chimeric protein

<400> 5
 Met Gly Gly Ser Gly Asp Asp Asp Asp Leu Ala Leu Ala Val Thr Lys
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 Ser Ser Ser Leu Leu Ile Val Gly Ala Gly Thr Trp Gly Thr Ser Thr
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 Ala Leu His Leu Ala Arg Arg Gly Tyr Thr Asn Val Thr Val Leu Asp
 35 40 45
 Pro Tyr Pro Val Pro Ser Ala Ile Ser Ala Gly Asn Asp Val Asn Lys
 50 55 60
 Val Ile Ser Ser Gly Gln Tyr Ser Asn Asn Lys Asp Glu Ile Glu Val
 65 70 75 80
 Asn Glu Ile Leu Ala Glu Glu Ala Phe Asn Gly Trp Lys Asn Asp Pro
 85 90 95
 Leu Phe Lys Pro Tyr Tyr His Asp Thr Gly Leu Leu Met Ser Ala Cys
 100 105 110
 Ser Gln Glu Gly Leu Asp Arg Leu Gly Val Arg Val Arg Pro Gly Glu
 115 120 125
 Asp Pro Asn Leu Val Glu Leu Thr Arg Pro Glu Gln Phe Arg Lys Leu
 130 135 140
 Ala Pro Glu Gly Val Leu Gln Gly Asp Phe Pro Gly Trp Lys Gly Tyr
 145 150 155 160
 Phe Ala Arg Ser Gly Ala Gly Trp Ala His Ala Arg Asn Ala Leu Val
 165 170 175
 Ala Ala Ala Arg Glu Ala Gln Arg Met Gly Val Lys Phe Val Thr Gly
 180 185 190
 Thr Pro Gln Gly Arg Val Val Thr Leu Ile Phe Glu Asn Asn Asp Val
 195 200 205
 Lys Gly Ala Val Thr Gly Asp Gly Lys Ile Trp Arg Ala Glu Arg Thr
 210 215 220
 Phe Leu Cys Ala Gly Ala Ser Ala Gly Gln Phe Leu Asp Phe Lys Asn
 225 230 235 240
 Gln Leu Arg Pro Thr Ala Trp Thr Leu Val His Ile Ala Leu Lys Pro
 245 250 255
 Glu Glu Arg Ala Leu Tyr Lys Asn Ile Pro Val Ile Phe Asn Ile Glu
 260 265 270
 Arg Gly Phe Phe Glu Pro Asp Glu Glu Arg Gly Glu Ile Lys Ile
 275 280 285
 Cys Asp Glu His Pro Gly Tyr Thr Asn Met Val Gln Ser Ala Asp Gly
 290 295 300
 Thr Met Met Ser Ile Pro Phe Glu Lys Thr Gln Ile Pro Lys Glu Ala
 305 310 315 320
 Glu Thr Arg Val Arg Ala Leu Leu Lys Glu Thr Met Pro Gln Leu Ala
 325 330 335
 Asp Arg Pro Phe Ser Phe Ala Arg Ile Cys Trp Cys Ala Asp Thr Ala
 340 345 350
 Asn Arg Glu Phe Leu Ile Asp Arg His Pro Gln Tyr His Ser Leu Val
 355 360 365

Leu Gly Cys Gly Ala Ser Gly Arg Gly Phe Lys Tyr Leu Pro Ser Ile
 370 375 380
 Gly Asn Leu Ile Val Asp Ala Met Glu Gly Lys Val Pro Gln Lys Ile
 385 390 395 400
 His Glu Leu Ile Lys Trp Asn Pro Asp Ile Ala Ala Asn Arg Asn Trp
 405 410 415
 Arg Asp Thr Leu Gly Arg Phe Gly Gly Pro Asn Arg Val Met Asp Phe
 420 425 430
 His Asp Val Lys Glu Trp Thr Asn Val Gln Tyr Arg Asp Ile Ser Lys
 435 440 445
 Leu Lys Gly Glu Leu Glu Gly Leu Pro Ile Pro Asn Pro Leu Leu Arg
 450 455 460
 Thr Gly His His His His His His
 465 470

<210> 6

<211> 1419

<212> DNA

<213> Artificial Sequence

<220>

<223> nucleotide sequence encoding a chimeric protein

<400> 6

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tataccaacg ttaccgtgct ggacccctat cctgtcccta gcgccatctc cgccggaaac 180
gacgtgaaca aagtcattag cagtggccaa tattcgaata acaaagacga aatcgaagtg 240
aatgagatct tggcggaaga ggcgtttaac ggttggaaga acgacccgct tttcaaaccg 300
tattatcatg atacgggcct gctgatgtct gcttgctcgc aggagggcct ggatcgccctg 360
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caacttcgac caaccgcttg gaccctggta cacattgctg taaaaccgga agaacgtgcg 780
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agtgcagacg gcacgatgat gagcattccg ttcgaaaaaa cccagattcc aaaagaagcc 960
gaaacgcgcg ttccggccct gctgaaagag acaatgcccc agctggcaga ccgtccattc 1020
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gttcagtatc gtgatatttc caagctgaaa ggagagttgg aaggtaagcc aatccctaac 1380
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<210> 7

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> sequence homology between the N-terminal sequence of Amadoriases Ia

<221> VARIANT

<222> 12

<223> Xaa = C or T

<400> 7
 Ala Pro Ser Ile Leu Ser Thr Glu Ser Ser Ile Xaa Val Ile Gly Ala
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 Gly Thr Trp Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
 20 25 30
 Gly Gly Gly Gly Gly Gly Gly
 35

<210> 8
 <211> 39
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Sequence homology between the N-terminal sequence of Amadoriase Ib

<400> 8
 Ala Pro Ser Ile Leu Ser Thr Glu Ser Ser Ile Ile Val Ile Gly Ala
 1 5 10 15
 Gly Thr Trp Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
 20 25 30
 Gly Gly Gly Gly Gly Gly Gly
 35

<210> 9
 <211> 39
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Sequence homology between the N-terminal sequence of Amadoriase Ic

<400> 9
 Ser Thr Glu Ser Ser Ile Ile Val Ile Gly Ala Gly Thr Trp Gly Cys
 1 5 10 15
 Ser Thr Ala Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu
 20 25 30
 Leu Leu Leu Leu Leu Leu
 35

<210> 10
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<220>
 <223> Sequence homology between the N-terminal sequence of Amadoriase II

<400> 10
 Ala Val Thr Lys Ser Ser Ser Leu Leu Ile Val Gly Ala Gly Thr Trp
 1 5 10 15
 Gly Thr Ser Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr
 20 25 30
 Thr Thr Thr Thr Thr Thr Thr
 35

<210> 11

<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary epitope tag

<400> 11
Asp Tyr Lys Asp Asp Asp Lys
1 5

<210> 12
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary epitope tag

<400> 12
Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
1 5

<210> 13
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary epitope tag

<400> 13
Cys Gln Asp Leu Pro Gly Asn Asp Asn Ser Thr
1 5 10

<210> 14
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary epitope tag

<400> 14
Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
1 5 10

<210> 15
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary epitope tag

<400> 15
His His His His His His
1 5

<210> 16
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary epitope tag

<400> 16
Asp Thr Tyr Arg Tyr Ile
1 5

<210> 17
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary epitope tag

<400> 17
Glu Tyr Met Pro Met Glu
1 5

<210> 18
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary epitope tag

<400> 18
Ala Ser Met Thr Gly Gly Gln Gln Met Gly Arg
1 5 10

<210> 19
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> exemplary epitope tag

<400> 19
Ser Phe Pro Gln Phe Lys Pro Gln Glu Ile
1 5 10

<210> 20
<211> 12
<212> PRT

<213> Artificial Sequence

<220>

<223> exemplary epitope tag

<400> 20

Lys Gly Phe Ser Tyr Phe Gly Glu Asp Leu Met Pro
1 5 10

<210> 21

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> exemplary epitope tag

<400> 21

Gln Tyr Pro Ala Leu Thr
1 5

<210> 22

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> exemplary epitope tag

<400> 22

Gln Arg Gln Tyr Gly Asp Val Phe Lys Gly Asp
1 5 10

<210> 23

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> exemplary epitope tag

<400> 23

Glu Val His Thr Asn Gln Asp Pro Leu Asp
1 5 10